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Co-creating and Mapping Curricula to the VLE

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Abstract

Changes in Higher Education (HE) teaching and learning frameworks, student cohort types, expectations and their evolved learning and engagement needs herald the demand for new approaches to designing curricula. The view that students know what they want, student centered learning, and HEs drive for mapping of curricula onto the Virtual Learning Environments (VLE) promotes the adoption of co-creating curricula. By mapping co-created curricula onto VLEs, the aspired goals are to encourage ownership, enhance students' engagement and collaborative learning. There are many challenges expected in the Analysis, Design and Implementations Life Cycle perspectives.

Keywords: Co-creation; Curricula; Teaching and Learning; VLE

1. Introduction

The evolving HE views, structural changes and approaches to teaching and learning demands periodic reviews of curricula [1]. The follow up cycles and stages of reviews, redefinition or designing new and approved curricula by HE Committees formalizes the process to update contents, resources and the use of supporting technology tools. This traditional process managed solely by lecturers is slowly changing to include students' views and participations.

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There are still a larger number of lecturers who are not willing to relinquish control of the traditional approach for the more collaborative approach. However, institutional mandates will encourage change.

There are noted changes to the student cohort demographics due to mobility and the search for better quality, more versatile teaching and learning delivery. These student cohorts' aspirations for up to date education demonstrates student awareness, forward thinking and student driven demands [4]. Their expectations signal the need for a change to the traditional approaches in the design and presentation of curricula.

While VLEs have been around for a while, they are largely being used as repositories and for students to submit their assessments and later on to receive assessment feedbacks. The financial outlay for implementing and supporting the VLEs does not justify such limited use. HEs continue to push using mandates, for lecturers to implement newer approaches to teaching and learning that encourages more engagement and interactions. The move towards co-creation of curricula and mapping it onto VLEs appear increasingly inevitable.

2. Fundamental Views from Systems Analysis and Design perspectives

The participating entities involved in this co-creation project are the student end users and lecturer designer. The task of mapping curricula to the VLE is largely the lecturer designer's role. Student end users provide feedback and verifications but play a limited role in the mapping process for various reasons. HE mandates stipulates basic standard infrastructural requirements in the VLE as well as regulates key management areas such as assessments and feedback. While end users typically involved in systems analysis and design are expert users in their business functions, student end users use the VLE for their learning functions for their period of study in HEs and are not classed as expert users. Their roles, functional purposes and period of use of the systems are very different.

2.1. Student End Users

Although the student entity is an end user of the curricula, they are only capable of providing perspectives from their own interactive experience within the curricula. Student entity comprised of cohorts from Year 1, Year 2, Year 3 and post-graduate students.

According to Boville, not all students can participate in co-creation activities due to their lack of experience and knowledge of the scope and relevant learning content [2, 3]. Additionally, possible participants may do so only to co-create for future student cohorts. Most of them may not necessarily have the essential world view (or helicopter eye view) of the curricula and its academic requirements. They also may not have sufficient maturity and ability to abstract and form the needed contextual ideas. Besides, the HE institutional demands for embedding specific stipulations on corporate, ethical and social responsibilities into the learning environment create a complicated platform that is difficult for student end users to understand [5].

The students are largely X and Y generations who are supposed to have potential skills applicable for the use of technology. However, this is only one aspect of the requirements. It is also recognized that the wide range of students' demographics coming from diverse culture and educational backgrounds raised questions about the viability, usability and ultimate quality of the co-created curricula. With more mature students returning to HEs, defining and designing the best fit is now more complex than ever.

The model of active student participation in Fig. 1 shows the potential role student co-creators can play and the range of scope for active participations and influence in stipulating curricula design. The lower steps in the ladder indicate very high levels of lecturer designer controls in co-creation decision making. The higher the steps the lesser the control levels for the lecturer and an increased control levels for the student end user.

Trials in co-creation of curricula shows that while co-creation can inject interesting facets into the teaching and learning environment, the level and scope of student end user involvement is restricted to specific "safe" areas [1]. Some of these rather narrow areas may for example, lie in suggestions of introducing new learning topics, the frequency of feedbacks within the curricula and the kind of reflective reports students can produce for assessments. Based on Fig.1, this falls within the premise of lecturer controlled decision-making and students' control of prescribed areas or specific areas of choice. The general thoughts are that the student end users are not empowered like real expert end users to have strong influences on the co-creation activity.

Additionally, the potential for high level of student end user influence depends very much on the curricula type, some of which based on subject specific needs, does not work well. The more specialized and theoretical the curricula, the more difficult it is for lecturers to relinquish control for collaborative co-creation. This tends to be the assumption that students do not have the relevant level of expertise in the subject area. As a result, this means that student end users will have a tough challenge to actually develop capabilities and arrive at the expert end user level, to be able to contribute effectively as a co-creator.

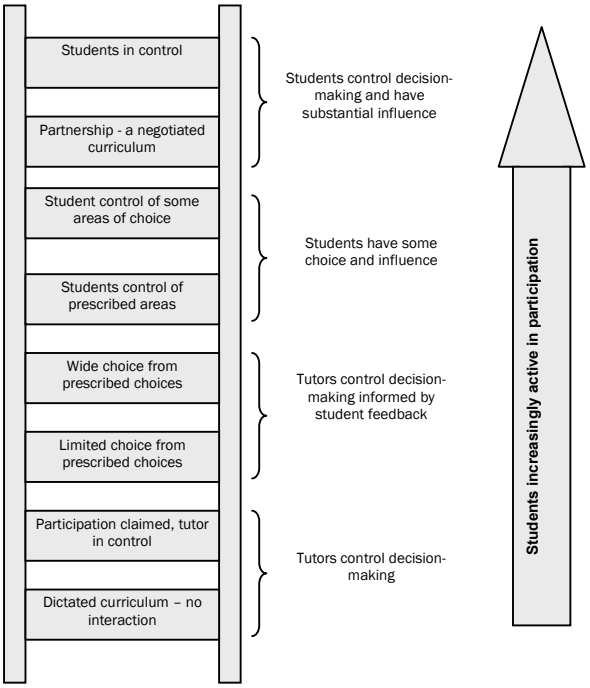

Fig. 1. A model of active student participation in curriculum design: exploring desirability and possibility. In Rust, C. Improving Student Learning (18) Global theories and local practices: institutional, disciplinary and cultural variations. Oxford: The Oxford Centre for Staff and Educational Development, pp176-188. [1].

2.2. Lecturer Designer

The Lecturer Designer entity comprised of a mix of new and existing experienced lecturers. High mobility means that many HEs have a high demographic mix of age range, different cultural backgrounds, professional cultures, skills and aspirations. The inexperienced, newer or younger lecturers has a higher learning curve and are potentially more versatile than their older, longer serving peers who are more set in their ways and resist change. Many of these younger lecturers are also closer in age and experience to those X and Y generations who are more exposed to the use of technology.

It must be noted that resistance to change could also be the result of the lecturer not having sufficient skills and knowledge to undertake the co-creation task. Technical skills and knowledge can easily be developed within the HEs. Some HEs award specific time and accessible support resources for lecturers to achieve the desired structural changes and improved teaching and learning resources. These support resources appear in the form of specialist staff teams who can develop and implement the required changes or conduct specialist training for lecturer designers.

As is typical of large, established institutions, the level and depth of policies, guidelines and regulatory instructions are sometimes too complex to understand [5]. The availability and ease of access to expert staff that can support the lecturer designer help facilitate the design and mapping of the curricula to the VLE. This ensures proper understanding and subsequently implementations in the systems analysis, design and implementations stages.

As co-creators, lecturers must have the empowerment, awareness and skills of using new approaches. They must be able to lead and have the ability to abstract the good existing definitions and design, blend it with new and possibly use radical techniques and tools. Essential skill sets such as helicopter eye view, adaptability, creativity, and innovative approach are important. Knowledge in how to use technology and related tools will help lecturers make relevant detailed plans and designs.

Referring to Fig. 1, where student end users are granted higher up the ladder or level of active student participation, the co-creating lecturer designers reduce their corresponding level of influence. Higher student participations facilitate development of students' life skills. While this is good for the students, it is necessary to balance empowerment to ensure meeting organizational requirements. This is managed through moderations by peer lecturers and the HE Quality control management process.

2.3. Processes in co-creation of curricula and life cycle

Submissions of new curricula proposals and applications for major curricula revisions in some HEs are initiated one year ahead of the target date of making the curricula available to students [4]. This is to allow the cycle of reviews, revisions and resubmissions to the various committees and approval parties, see Fig. 2. HEI and School level strategy and policy mandates generally govern the high level scope of procedures. Guidelines for teaching and learning define the scope for teaching plans, lecturer-student contact time, high level curricula structure and definition of assessments including the obligatory good practice and meeting other teaching and learning requirements.

The current oft practiced style of participatory curricula design largely resides on the last four rungs of the ladder, see Fig.1, depending on staff or peer and students' feedback, see Fig. 2, that is very much tutor or lecturer controlled.

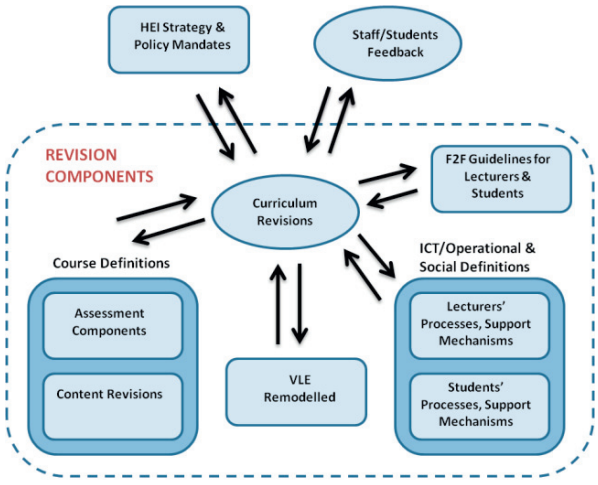

Fig. 2 Iterative Curriculum Revision (ICR) Framework [4]

For early adopters of the practice of co-creation of curricula, it is essential to set the expectations from the outset by defining the scope of and extent of permitted co-creation influence in each of the lecturer and student entities'

roles. This is in line with essential good practice in systems analysis and design processes to ensure minimal distractions, misunderstandings and any dissatisfaction.

Terms and conditions such as definitions for the contract of learning, the iterative co-creation cycle of reviews, feedback and amendment processes, the mandates, policies and HE guidelines have to be clearly explained, documented and understood. The type and stage of co-creation based on the curricula execution at current or future times should also be stipulated and understood by all parties [1]. Governance in the form of regulatory controls from the HEI strategy and policy mandates scope the extent of permitted design frames and changes.

Following the systems analysis and design life cycle, the initiating stage of the co-creation process starts from the recognition that the curricula is dated and need changes. Using the existing documentations as a point of reference, the lecturer designer's teaching team, peers and student end users provide useful external feedback to the lecturer designer who then makes informed decisions on co-creating curricula designs, see Fig. 2. Revisions and resubmissions, review, feedback assistance, and advice from experienced co-creators help minimize the risk of failures.

The lecturer designer interactively redefines the Course Definitions as required during the co-creation process as a means of managing the specifications of the co-created curricula. ICT, its operations and social definitions which govern the technology terms and usage must also be embedded into the co-created curricula. Additional face-to-face guidelines defined by the HE policies must also be met. These are reviewed by entities such as the student end users, peer lecturers and special learning quality education committees. This is an iterative cycle of submission of proposal, review and feedback, and revisions until the final co-created curricula definitions and quality is satisfactorily met, see Fig. 2.

Expert support from special committees organized from a collection of internal HE institutional experts as well as from peer institutions will provide the needed guidance. Training, workshops, drop-in clinics and the provision of online resources form useful self-help channels to answer questions and speed up the early stage learning cycle of co-creating the curricula. To ensure standards are maintained, quality control and sustainable practices have to be formalized and relevant staff with the expertise accessible to the co-creators.

At the final stages, test or trial runs led by lecturer designers to simulate the run of the co-created curricula with the student end users are essential to tease out any irregularities for corrections prior to live implementations. In reality, this is the most difficult process because it is not always possible to simulate the responses and effectiveness of some of these changes. Response time factors and variants of reactions coming from diverse cultural and skills differences make it difficult to gauge success rates. This explains the incremental approach to co-creating curricula.

3. Mapping co-created curricula to the VLE

There must be a conscious effort to remember that the VLE is more than a repository for lecture slides, learner communication tool, gateway for assessment submissions and assessment feedback. Provided the appropriate links are made in the VLE for students to enjoy virtual multimedia tours, virtual assessments, interactivity and 24/7 accessibility, the students will not have the chance to maximize the potentials of what the VLE can offer.

HE institutional mandates, policies and regulatory guidelines help facilitate mapping of co-created curricula onto the virtual context in the VLE. This helps to set the lower threshold in terms of minimum design templates and as the expected scope or standard for all other curricula to follow institution-wide. An example list of the co-created curricula content (that is not exhaustive) may include the following:

- Curricula handbook detailing curricula brief, specifications, guidelines, teaching plans, assessment details, etc.
- Topical definitions linking topical learning activities and related assessments.
- Communications channel for lecturer-to-student, student-to-lecturer and student peers.
- Internet and Multimedia links as a form of learning resource.

In line with systems analysis and design perspectives, the early stages of the mapping process should include discussions with various entities established as a common group. The formation of an Advisory Committee comprising of teaching and learning specialists, lecturer designers and representative student end users help facilitate and communicate standards and advice to co-creators in need of consultation. Representations of

individuals should come from various backgrounds, departments and schools within the HE institution to enable sharing of good practice.

In the instance where the co-creation lecturer designer champion leading the co-creation and mapping processes is available, he or she demonstrate and exhibit example curricula sites in the VLE. Otherwise, the lecturer designer who leads the co-creation and mapping processes will perform the actual mapping of the co-created curricula contents onto the VLE privately. This is managed on a staged basis where after each stage is completed, consultations are made for the reviews and feedback mechanism. Modifications are then made based on this mechanism followed by new consultations. This process is iterative until it satisfies requirements such as the organizational HE strategy and mandates, teaching and learning needs, lecturer designer and student end users.

Lecturer designers must be properly trained to have the right technical skills to do the mapping work that is also referred to as the development work within the VLE. This involves selecting the right virtual tools available in the VLE and knowing how to use them. A few examples (from the co-created example list above) are:

- Selecting the correct file format, loading it into the VLE curricula site and testing that the loaded file works.
- Create relevant and appropriate links from specific topical contents to additional resources to encourage students' interactions and learning engagement. This purposeful functional mapping of the co-created curricula and teaching plans help frame the learning environment for the particular curricula.
- Selecting from a list of available communication tools available from the VLE such as chats, forums, blogs, journals, etc. Some communication tools can be predefined as private or public depending on the lecturer designer's intent for that specific function.
- Selecting the appropriate, fit for purpose internet and multimedia links which are then linked using the relevant tools in the VLE.

The task of mapping the co-created curricula to the VLE is similar to using high level programming language to do programming without having to define too many detail specifications because of the availability of libraries. The current and newer versions of VLEs like Moodle and Blackboard used in many HEs in the UK makes the mapping process easy to manage [6, 7]. Each and every section of the mapped co-created curricula in VLE are tested by the lecturer designer first, retested by the student end users and finally, rigorously reviewed and tested by reviewer peer lecturers.

In accordance to the systems analysis and design practices, these major stages should be signed off to document the closures and progressions of stages. The cycle of time or stage for testing and reviewing the mapped co-created curricula must be run, reviewed and refined before the final full implementations to ensure a successful project run. Additionally, there should be a separate body to conduct audits to verify standards across the HE institution. Finally, a well co-created design in the use of the VLE helps balance out the time for support, student communications and support especially for those curricula supporting very large cohorts of students.

4. Nurturing Factors of Co-creation

Both the student end users and the lecturer designers going through the co-creation passage of rites derive a level of satisfaction from the altruistic experience. The pooling of skills, knowledge and expertise, joint decisions made, multiple negotiations, pushes and pulls in testing ideas, and learning from each other in the co-creation teams makes it an enriching experience when the desired outcome is achieved. Collaborative practice and learning give participants the opportunities to cooperate, lead at random and develop a more cohesive lecturer-student relationship. There is also the potential for very much improved strategy in curricula packaging and delivery as a result of this cohesion. Besides, the expanded feedback-mechanism allows the curricula to logistically be refined and improved more seamlessly, up to date and at a faster pace.

Co-creation experience for the student is a personal experience in terms of, for example see [2]:

- Personal development in personal attributes like leadership, negotiation skills, abstraction skills all of which are classed as training in-situ of professional life-long learning skills
- Building a new learning culture for the student

- Recognition and professional achievement
- Increased sense of ownership through the roles and responsibilities taken on
- Satisfaction and ultimately improved student retention

For the lecturer designers, regular offerings of training sessions and open consultative sessions encourage more face-to-face interactions and clarity of definitions and practice. The process involved in co-creating and mapping curricula to the VLE additionally is a personal development process for the lecturer designer. Better levels of awareness and clarity of teaching practice help improve teaching and learning standards in HEs.

5. Costs of Co-creating Curricula

Although there are many past publications suggesting that there are adopters of co-creation of curricula, Bovill highlighted that there many more lecturers who are resistant [2]. Lecturers fear the danger of losing control over learning contents and assessments where the balance of power shifts in favor of the student end users. Bad design decisions devalue the curricula. Additional time needed to rectify causes dissatisfactions and delays. Versatility for lecturer designers in the form of self autonomy updates (in the past) is reduced with the introduction of co-creation practices. There is also the danger where efficiency can be compromised by red tape and having to confer with the co-creator team members and too many levels of reviews, feedback and revision sessions.

Students who are invited to join the co-creation team must be pre-selected following specific requirements and qualities. This proves that there are limitations and some restrictions. While co-creation removes bias through collaborative consultations, it introduces new bias by way of higher levels of influence and control. The controlling party, by default issues mandates to the rest in the party. The levels of controls are difficult to pin down because this is very much dependent on the level of democracy afforded by each practicing HE, faculty and lecturer. The cycle of stages for review and approvals by the co-creative team is lengthy due to the additional consultative time needed to complete a specific task. The enforced cooperation and coordination reduces the co-creator lecturer's self autonomy and to a certain extent, creativity.

6. Good Practice for Co-creation

The first golden rule in good practice in Systems practice is having good documentations which serve as the main point of reference for all parties. Clarifications, reviews and updates can be made from time to time. It is important to sign off stages, especially in large scale implementations so that all participating co-creator parties understand all terms of references. However, excessive documentations can generate a negative effect. It is therefore essential to balance the practice based on necessity and relevance.

Formality of the process is a decision for the co-creating parties and the regulating HE institute to make. There are no strict ground rules on how formal or simplified it should be. Consultations, reviews and feedback procedures are essentials for co-creating. Just like the Systems Analysis and Design processes, over complex rulings makes difficult understanding.

7. Conclusions

The changing environments and needs in HE institutes, the wide demographic spread of cultures seen in lecturer designers and student end users see the progressive move towards co-creation of curricula. The ladder model (of active student participation in curriculum design), help explain the potential different distinct type and stages of student co-creators involvements. The amount of student co-creator involvement is dependent on invitations to participate and the level of control decisions held by lecturer designers. The roles of the student end user and lecturer designer co-creators are discussed from the Systems perspective. Essential processes in the co-creation of curricula are briefly reviewed.

With the use of HE institutional mandates, policies and guides, the mapping of co-created curricula onto currently used VLEs is reasonably easy. However, it is essential to draw up Support and Advisory committees for

ensuring accessibility to expert advice of various natures. Regular training and contact with peer experts help sustain knowledge transfer for co-creation tasks and implementations.

It is recognized that while co-creation has nurturing factors attached to it, there are also drawbacks. Due to its strong exploratory element, it is difficult but not impossible to define scopes and boundaries. A certain level of democracy and balance is important for ensuring the well being of the co-creation tasks. Good Systems' practices help provide the backend push and support to a successful implementation of co-creation of curricula.

The future trends towards independence, democracy and self-help for students can only happen when lecturers are able to co-design and implement a good modular, independent, easy to pick-and-choose curricula with a flexi-award for students at the end of their learning term. The current attempts at co-creation of curricula and mapping it to the VLE is already happening but there is a need to push this to the next higher level.

Acknowledgements

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